



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

12655

D4704-041

Job Sheet 189325



Part No: D4704-041

Job Qty: 4 pcs

Part Name: Expandable Pin Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/22/19

Job Tracking No:

Due Date: 2/6/19

Created By: Dara Macdonald

Type: SOLD

Description:

Note: DWG REV B SHEET 1 IPP REV:A 12.09.10 NEW ISSUE DD VERF:JFS IPP REV:B 12.10.16 AS PER DWG  
REV.A DD VERF:JFS IPP REV:C 17.01.11AS PER DWG REV.B PRELIM DD VERF:JLM

Ship Via:

008148

### Bill of Materials

### Job Routing

| Op<br>No | Operation              | Qty   | Start Date | Due<br>Date | Standard     |            | Workcenter/Supplier   |           | Sign-off |
|----------|------------------------|-------|------------|-------------|--------------|------------|-----------------------|-----------|----------|
|          |                        |       |            |             | Setup<br>Hrs | Run<br>Hrs | Workcenter / Supplier | Lead Time |          |
| 110      | Packaging 1 - Pick Kit | 4 pcs |            | 2/6/19      | 0.00         | 0.00       | Packaging 1 - 1       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 2       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 3       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 4       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 5       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 6       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 7       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 8       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 9       |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 10      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 11      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 12      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 13      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 14      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 15      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 16      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 17      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 18      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 19      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 20      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 21      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 22      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 23      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 24      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 25      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 26      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 27      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 28      |           |          |
|          |                        |       |            |             |              |            | Packaging 1 - 29      |           |          |

DAS  
28  
9-89

|     |                             |       |        |           |                        |                   |
|-----|-----------------------------|-------|--------|-----------|------------------------|-------------------|
|     |                             |       |        |           | Packaging 1 - 30       |                   |
|     |                             |       |        |           | Packaging 1 - 31       |                   |
|     |                             |       |        |           | Packaging 1 - 32       |                   |
|     |                             |       |        |           | Packaging 1 - 33       |                   |
|     |                             |       |        |           | Packaging 1 - 34       |                   |
|     |                             |       |        |           | Packaging 1 - 35       |                   |
| 120 | Small Fab - 2 - B4B         | 4 pcs | 2/6/19 | 0.00 0.00 | Small Fab - 1 - B4B    |                   |
|     |                             |       |        |           | Small Fab - 2 - B4B    |                   |
|     |                             |       |        |           | Small Fab - 3 - B4B    | DAS               |
|     |                             |       |        |           | Small Fab - 4 - B4B    | 36                |
|     |                             |       |        |           | Small Fab - 5 - B4B    | 9-89              |
|     |                             |       |        |           | Small Fab - 6 - B4B    |                   |
|     |                             |       |        |           | Small Fab - 7 - B4B    |                   |
| 130 | QC 5                        | 4 pcs | 2/6/19 | 0.00 0.00 | QC 5 - 10              |                   |
|     |                             |       |        |           | QC 5 - 12              |                   |
|     |                             |       |        |           | QC 5 - 17              |                   |
|     |                             |       |        |           | QC 5 - 18              |                   |
|     |                             |       |        |           | QC 5 - 19              |                   |
|     |                             |       |        |           | QC 5 - 22              |                   |
|     |                             |       |        |           | QC 5 - 24              |                   |
|     |                             |       |        |           | QC 5 - 3               |                   |
|     |                             |       |        |           | QC 5 - 38              |                   |
|     |                             |       |        |           | QC 5 - 42              |                   |
|     |                             |       |        |           | QC 5 - 43              |                   |
|     |                             |       |        |           | QC 5 - 49              |                   |
|     |                             |       |        |           | QC 5 - 51              |                   |
|     |                             |       |        |           | QC 5 - 58              | DAS               |
|     |                             |       |        |           | QC 5 - 68              | FEB 19 2019 68    |
|     |                             |       |        |           | QC 5 - 9               | 9-89              |
|     |                             |       |        |           | QC 5 - 50              |                   |
|     |                             |       |        |           | QC 5 - 30              |                   |
| 140 | Packaging 3-1 - Stock - B4B | 4 pcs | 2/6/19 | 0.00 0.00 | Packaging 3 - 1 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 2 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 3 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 4 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 5 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 6 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 7 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 8 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 9 - B4B  |                   |
|     |                             |       |        |           | Packaging 3 - 10 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 11 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 12 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 13 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 14 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 15 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 16 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 17 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 18 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 19 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 20 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 21 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 22 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 23 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 24 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 25 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 26 - B4B |                   |
|     |                             |       |        |           | Packaging 3 - 27 - B4B | STILL FEB 19 2019 |
|     |                             |       |        |           | Packaging 3 - 28 - B4B |                   |

|     |            |       |        |                        |                 |
|-----|------------|-------|--------|------------------------|-----------------|
|     |            |       |        | Packaging 3 - 29 - B4B |                 |
|     |            |       |        | Packaging 3 - 30 - B4B |                 |
|     |            |       |        | Packaging 3 - 31 - B4B |                 |
|     |            |       |        | Packaging 3 - 32 - B4B |                 |
|     |            |       |        | Packaging 3 - 33 - B4B |                 |
|     |            |       |        | Packaging 3 - 34 - B4B |                 |
|     |            |       |        | Packaging 3 - 35 - B4B |                 |
| 150 | QC 21 - SA | 4 pcs | 2/6/19 | 0.00 0.00              | QC 21 - SA - 21 |
|     |            |       |        |                        | QC 21 - SA - 70 |

Part Op 110 - (Pick Kit)  
 Descriptions: 120 - (Small Fab)  
 130 - (QC5- Inspect part completeness to step on W/O)  
 140 - (Identify as per dwg & Stock Location: \_\_\_\_\_)  
 150 - (QC21- Final Inspection - Work Order Release)

DAG  
21 FEB 19 2019

---

**Job BOM**

| Part / Item | Component Name                    | Quantity     | Operation                  | Container |
|-------------|-----------------------------------|--------------|----------------------------|-----------|
| D4708-1     | Lanyard                           | 4 pcs (1 ea) | 110-Packaging 1 - Pick Kit | 5153881   |
| D4709-1     | Spring Clip                       | 8 pcs (2 ea) | 110-Packaging 1 - Pick Kit | 5056739   |
| D4711-041   | Expandable Pin Assembly, Modified | 8 Ea (2 ea)  | 110-Packaging 1 - Pick Kit | 5154059   |
| MS20613-4C8 | Rivet                             | 16 Ea (2 ea) | 110-Packaging 1 - Pick Kit | 5152635   |
|             |                                   | (2 each)     |                            | Fm138043  |

6010 MS20613-4C7

---

**Job Allocations**

| Operation                  | Component Part    | Required | Inventory | Allocated |
|----------------------------|-------------------|----------|-----------|-----------|
| 110-Packaging 1 - Pick Kit | D4708-1           | 4        | 0         | 0         |
|                            | D4709-1           | 8        | 10        | 0         |
|                            | D4711-041         | 8        | 0         | 0         |
|                            | MS20613-4C8 6A010 | 16       | 103       | 0         |

---

**Part Specifications**

Specifications could not be found.

Plex 1/22/19 2:28 PM Dart.Macdonald.Dara



Container No: S154574



Part: D4704 - 041

Job No: 189325

Serial No/Batch: S154574

Revision:

Inspector:

Exp Date:

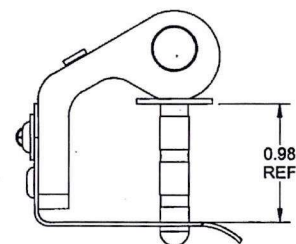
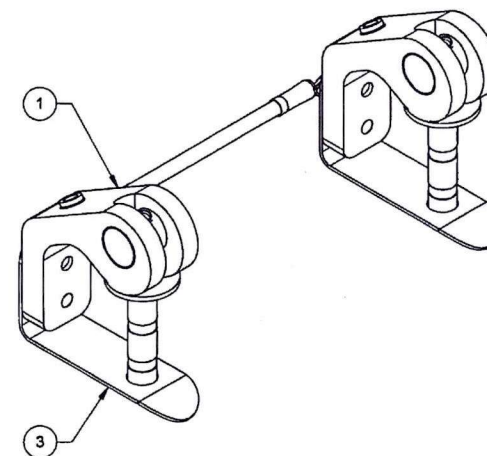
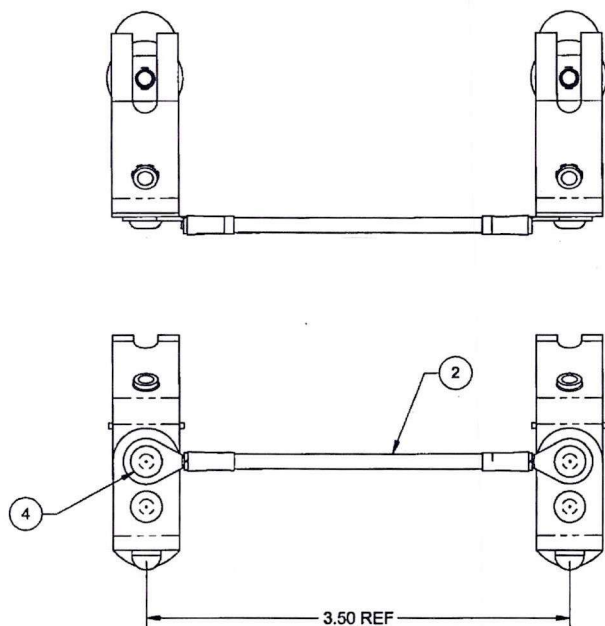
Instructions: Various STC's

Dart Aerospace Ltd.  
 1270 Aberdeen Street  
 Hawkesbury, ON K6A 1K7  
 CANADA  
 TEL.: 1 613 632-5200  
 Email: sales@dartaero.com  
 www.dartaerospace.com

Date: 02/19/19



| ITEM | QTY | P/N         | DESCRIPTION              |
|------|-----|-------------|--------------------------|
|      | X   | D4704-041   | EXPANDABLE PIN ASSY      |
| 1    | 2   | D4711-041   | EXPANDABLE PIN, MODIFIED |
| 2    | 1   | D4708-1     | LANYARD                  |
| 3    | 2   | D4709-1     | SPRING CLIP              |
| 4    | 4   | MS20613-4C8 | RIVET                    |



# **D4704-041 EXPANDABLE PIN ASSY**

## **NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4704-041" AND B/N "BXXXXX" PER QSI 044 6.7
- 7) WEIGHT: 0.39 lbs

**RELEASED**

2017 MAY 24  
ECN 17-571

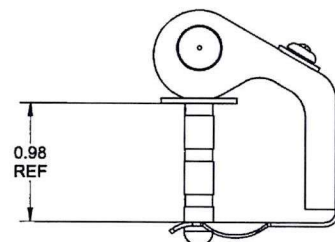
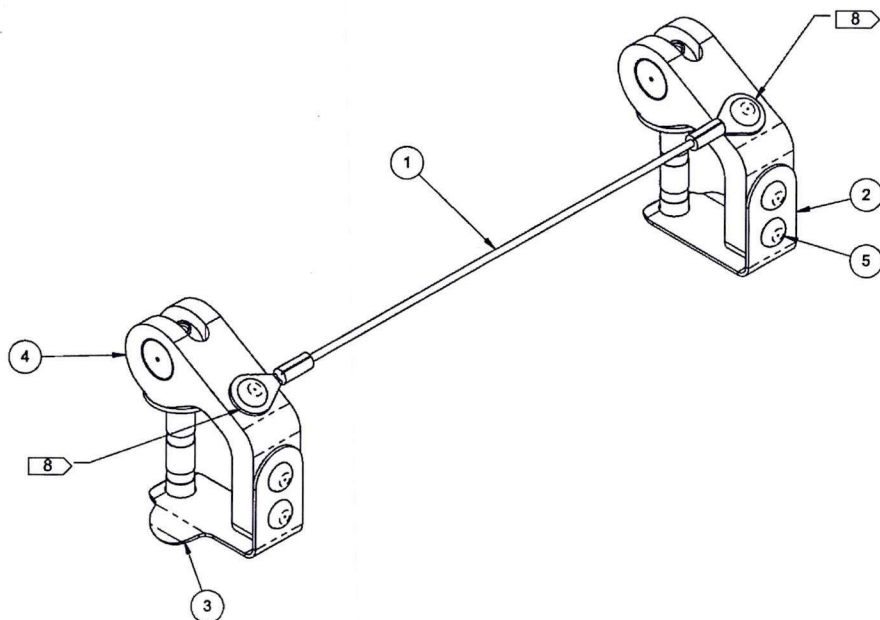
| B          | ADDED D4704-043 | VS | 17.02.02 |
|------------|-----------------|----|----------|
| A          | NEW ISSUE       | RP | 12.09.19 |
| REV.       | DESCRIPTION     | BY | DATE     |
| DESIGN     | VS              |    |          |
| DRAWN      | VS              |    |          |
| CHECKED    | WK              |    |          |
| MFG. APPR. | JLM             |    |          |
| APPROVED   | HS              |    |          |
| DE APPR.   | DS              |    |          |
| DATE       | 17.02.02        |    |          |

**DART AEROSPACE USA, INC.**  
EUGENE, OR

DRAWING NO. **D4704** REV. B  
SHEET 1 OF 2  
TITLE **EXPANDABLE PIN ASSY** SCALE NTS

COPYRIGHT © 2012 BY DART AEROSPACE USA, INC.  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS  
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT  
WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

| ITEM | QTY | P/N         | DESCRIPTION              |
|------|-----|-------------|--------------------------|
|      | X   | D4704-043   | EXPANDABLE PIN ASSY      |
| 1    | 1   | D4708-11    | LANYARD                  |
| 2    | 1   | D4709-3     | SPRING CLIP              |
| 3    | 1   | D4709-4     | SPRING CLIP              |
| 4    | 2   | D4711-041   | EXPANDABLE PIN, MODIFIED |
| 5    | 6   | MS20613-4C8 | RIVET                    |



**D4704-043 EXPANDABLE PIN ASSY**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4704-043" AND B/N "BXXXXX" PER QSI 044 6.7
- 7) WEIGHT: 0.39 lbs
- 8) ENLARGE D4308-11 HOLES TO  $\phi 0.209$

**RELEASED**

2017 MAY 24

APPROVED

|            |          |                                                                                                                                                                                                                                                                                                     |              |
|------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | VS       | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                                     |              |
| DRAWN      | VS       | EUGENE, OR                                                                                                                                                                                                                                                                                          |              |
| CHECKED    | WK       | DRAWING NO.                                                                                                                                                                                                                                                                                         | REV. B       |
| MFG. APPR. | JLM      | <b>D4704</b>                                                                                                                                                                                                                                                                                        | SHEET 2 OF 2 |
| APPROVED   | HS       | TITLE                                                                                                                                                                                                                                                                                               | SCALE        |
| DE APPR.   | DS       | <b>EXPANDABLE PIN ASSY</b>                                                                                                                                                                                                                                                                          | NTS          |
| DATE       | 17.02.02 | <small>COPYRIGHT © 2012 BY DART AEROSPACE USA, INC.<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> |              |

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |              |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Sequence #: _____                                                                                                                 | QTY Affected : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        | MRB (QSI042) |  |
| <b>Description Work Order Deviation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Disposition</b>     |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Completed By           |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Lead hand / Supervisor |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | QC / QA Coordinator    |              |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Preservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |                        |              |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |              |  |